# VESDA VLF

## VLF-250




The VESDA VLF-250 detector is a very early warning smoke detector designed to protect small, business-critical environments of less than 250 $m^2$ (2500 sq. ft.).

The detector works by continually drawing air into sampling holes in a pipe network. The air is filtered and passed into a detection chamber where light scattering technology detects the presence of very small amounts of smoke. Detector status information is communicated on the detector display and via relays or optional interface cards.

### Out-of-the-box operation

The VLF can be installed and commissioned out-of-the-box without the need for a special interface or software programming tools.

In operation, the unique Smoke Dial™ display provides the user with an instant understanding of a smoke event, even from a distance. Should a fault occur, the user simply opens the field service door and activates the Instant Fault Finder feature to determine the specific fault condition. This information can then be passed onto their fire service company, ensuring that service technicians arrive onsite fully prepared.

### Ultrasonic Flow Sensing

The patent-pending Ultrasonic Flow Sensing used in the VLF provides a direct reading of the sampling pipe flow rate. The system is immune to air temperature and pressure changes and is unaffected by contamination. The VLF is the first air sampling smoke detector to use ultrasonic flow sensing.

### Features

- Out-of-the-Box Installation and Commissioning
- Ultrasonic Airflow Sensing
- Laser-Based Absolute Smoke Detection
- Pre-engineered pipe network designs
- Programmable Alarm Thresholds
- Clean air barrier optics protection
- Instant Recognition Display
- Instant Fault Finder™
- AutoLearn™ Smoke
- AutoLearn™ Flow
- Field Service Access Door
- Multiple Event Logging in separate logs
- Event log – up to 18000 events
- Offline/online configuration capability
- Up to 250 $m^2$ (2500 sq. ft.) coverage*

### Listings/Approvals

- UL
- ULC
- FM
- CFE
- LPCB
- VdS
- VNIIPO
- AFNOR
- ActivFire
- CE - EMC and CPD
- EN 54-20
  - Class A (12 holes / 0.12% obs/m)
  - Class B (12 holes / 0.35% obs/m)
  - Class C (12 holes / 0.80% obs/m)

  *Classification of any configuration is determined using ASPIRE2.*

Regional approvals listings and regulatory compliance vary between VESDA product models. Refer to www.xtralis.com for the latest product approvals matrix.

VESDA® by xtralis™

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## VLF-250

## Specifications

**Input Power**

| | |
|---|---|
| Voltage: | 24V DC Nominal (18-30 V DC) |
| Current @ 24 VDC: | 220 mA nominal, 295 mA in alarm |
| **Dimensions (W x H x D)** | 256 mm x 183 mm x 92 mm ($10^{1}/_{16}$ in x $7^{1}/_{5}$ in x $3^{2}/_{3}$ in) |
| **Weight** | Approx. 2 kg (4.4 lbs) |
| **IP Rating** | IP30 |
| **Mounting** | Upright, inverted or horizontal |

**Operating Conditions**

| | |
|---|---|
| Ambient: | 0°C to 39°C (32°F to 103°F) * |
| Tested to: | -10°C to 55°C (14°F to 131°F) |
| Sampled Air: | -20°C to 60°C (-4°F to 140°F) |
| Humidity: | 5% to 95% RH, non-condensing |

**Sampling Network**

| | |
|---|---|
| Maximum pipe lengths: | 1 x 25 m (80 ft) (Max. 12 holes)<br>2 x 15 m (50 ft) per branch (Max. 6 holes per branch) |
| Sampling Hole Options: | Pre-Engineered Option or Maximum Pipe length in accordance with Pipe Modelling Design Tool (ASPIRE2™) |

**Air Inlet Pipe**
Accepts both metric and American standard pipe sizes
Metric: 25 mm (1.05 in.) American Pipe: IPS 21 mm (¾ in.)

**Area Coverage**
Up to 250 m² (2500 sq. ft.) depending on local codes and standards

**Relay Outputs**
3 changeover relays (Fire 1, Action, Fault), Contacts rated 2A @ 30 VDC (max). NO/NC Contacts

**Cable Access**
3 x 25 mm (1.05 in.) cable entries (1 rear entry, 2 top entry)

**Cable Termination**
Screw Terminals 0.2-2.5 mm² (30-12 AWG)

**Interfaces**
Shown in Terminal Block Connections diagram, to right, plus an RS232 Programming Port.
General Purpose Input (GPI) interface offers: Reset, Disable, Standby, Alarm set 1, Alarm set 2 and External Input functions.

**Alarm Threshold Setting Range**

| | |
|---|---|
| Alert, Action | 0.025 - 2.00% obs/m (0.008 - 0.625% obs/ft) |
| Fire 1, Fire 2 | 0.025 - 20.00% obs/m (0.008 - 6.25% obs/ft) |
| Individual Alarm Delays | 0 – 60 seconds |
| Two Alarm Threshold Settings | Either time or GPI based |

**Display**

- 4 Alarm State Indicators
- Smoke Level Indicator
- Reset, Disable and Test Controls
- Fault and Disabled Indicators
- Instant Fault Finder
- Smoke and Flow AutoLearn Controls

**Event Log**
Up to 18000 events, time and date stamped in separate, non-volatile, logs for:
Smoke Level, Flow Level, Detector Status and Faults

**AutoLearn Smoke & Flow**

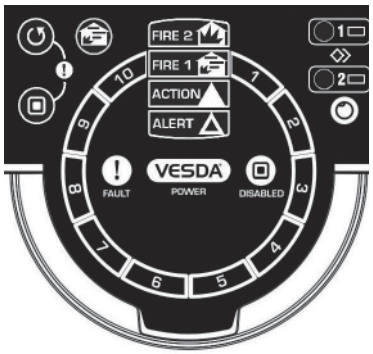
- Automatically set acceptable alarm thresholds for both smoke and flow levels
- Minimum 15 minutes, maximum 15 days (default 14 days)
- During AutoLearn thresholds are NOT changed from pre-set values

**Warranty Period**
2 years

**Ordering Information:**
VLF-250-00 VESDA VLF. European language set. English display labels
VLF-250-01 VESDA VLF. European language set. International display labels
VLF-250-02 VESDA VLF. English + Asian language set. International display labels
VLF-250-04 VESDA VLF. English + Russian language set. International display labels
VLF-250-05 VESDA VLF. English + Eastern Euro language set. International display labels
VIC-010 VESDAnet Interface Card, VIC-020 Multifunction Control Card (MCC)
VIC-030 Multifunction Control Card (MCC) with Monitored Powered Output (MPO)
VSP-005 Filter Cartridge, VSP-722 Aspirator for VESDA VLF-250

## Display:

The display provided to the user includes a Smoke Dial™ and alarm and status indicators.

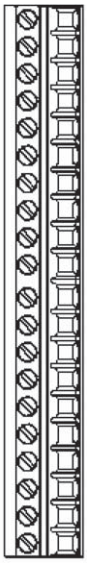



When the field service access door is open, the user has access to the RESET ↺, DISABLE ⊡, Fire Test 🔥, AutoLearn ◇» and Instant Fault Finder functions.
When the Instant Fault Finder function is activated, the Smoke Dial™ converts to a fault indicator, with the dial segment numbers corresponding to the faults listed below.

## Legend of fault indicators:

| | |
|---|---|
| 1 Filter | 6 External Device/PSU |
| 2 Aspirator | 7 Interface card |
| 3 High flow | 8 Field wiring |
| 4 Low flow | 9 AutoLearn Fail |
| 5 n/a | 10 Detector failure |

## Terminal Block Connections:



| | | |
|---|---|---|
| 1 | GPI | |
| 2 | GPI | |
| 3 | Display TX | |
| 4 | Display RX | |
| 5 | Display Common Ground | |
| 6 | Display Power - | |
| 7 | Display Power + | |
| 8 | Power Return 0 VDC | From power supply unit |
| 9 | Power In 24 VDC | |
| 10 | Power Return 0 VDC | To next detector (if more than 1 detector per Power Supply Unit) |
| 11 | Power Out 24 VDC | |
| 12 | NC | |
| 13 | Common | Fault relay |
| 14 | NO | |
| 15 | NC | |
| 16 | Common | Action relay |
| 17 | NO | |
| 18 | NC | |
| 19 | Common | Fire 1 relay |
| 20 | NO | |

## Approvals Compliance

Please refer to the Product Guide for details regarding compliant design, installation and commissioning.

* Product UL listed for use from 0°C to 38°C (32°F to 104°F)


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